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Sternwarte, Mittheilungen, II., presented by the Observatory; Brussels, Société belge d'Astronomie, Bulletin, Année 1–8, presented by the Society; Carte photographique du Ciel, 33 charts, presented by the French Government; Osborne Reynolds, The Sub-mechanics of the Universe, presented by the Royal Society; T. N. Thiele, Theory of Observations, presented by the author; Washburn Observatory Publications, vol. xi. (meridian observations for stellar parallax), presented by the Observatory; L. Weinek, Definitive Resultate aus den Prager Polhöhen-Messungen, presented by the Prague Observatory.

Preliminary Note on the Possible Existence of two Independent Stellar Systems. By F. A. Bellamy and H. H. Turner, D.Sc., F.R.S., Savilian Professor.

The authors desire to withdraw this paper. It was intimated in the January number of the *Monthly Notices* that some numerical corrections had been found necessary; but it was not possible to say at the time how far the main conclusions would be affected. On going carefully through the work it is found that the correction is unfortunately vital, and the trace of a double polarity which now remains is practically negligible

Note on a New Star in the Constellation of Gemini.

By F. A. Bellamy.

The circumstances attending the discovery of a *Nova* are perhaps of sufficient general interest to warrant their being given in some detail. On the night of March 16 I was exposing plates in zone +30° required to complete that zone for the Astrographic Survey, and among the few required was that with the coordinates of the centre of the plate equal to $6^h\ 36^m\ +30°$. Having some difficulty in identifying the star for which I had set the micrometer scales and instrument, owing to its faintness (8·6) in an illuminated field, I decided to use a bright star which I thought was in the same field of view and less than half a réseau interval away. I accordingly moved the scales and brought the bright star into bisection, and exposed the plate for 6^m, and also gave it 4^m and 20^s.

Whilst exposing the plate Mr. H. C. Plummer came into the Dome and asked if he could help. I remarked to him that I had

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some trouble in picking up the star as given in the catalogue, and said I was using a bright star of the seventh magnitude—a magnitude distinctly visible in a bright field in the 12$\frac{1}{4}$-inch O.G.—and had moved the scale to that star; would he alter my setting in *y* in the note-book and write +2′ 40″ instead of +5′ 0″. I further said that I should finish the exposures, though I expected I should have to take the region again, as I believed there was some error in the catalogue star (B.D. + 30°, 1306), as neither the setting nor the magnitude agreed with the bright star I used; and I could not then think why an 8·6 star had been selected when there was a seventh-magnitude star so near it, and suspected a transposition of figures intended for 6·8 mag. I developed the plate (No. 2193) the next day and examined it the following day, when we found that I had erroneously set the telescope by 1$^{\rm m}$ in hour-angle, and so used another star. This being beyond the limits of error in setting permissible, the plate was rejected without further examination and put among the rejected plates in the lecture room, and the region marked to be taken again.

On March 24 Professor Turner was going through all the plates recently taken. I may say that we had had a batch of plates which were not quite so rapid as usual, and this, with some indifferent weather, put a number of plates on the border line between acceptance and rejection. After settling which were to be rejected Professor Turner took them to the lecture room, and in putting them with others found three plates apparently rejected by mistake, as no reason was written on the envelope. He took them upstairs for inquiry and was told that No. 2193 had been rejected for wrong setting, though the notification of this fact had been accidentally omitted. To guard against a repetition of the error in setting, he took down an "overlapping" plate from the rack, viz. Plate 963, Centre +29° 6$^{\rm h}$ 40$^{\rm m}$, exposed 1896 January 28, and saw at once that there was a strange object on Plate 2193, which had been used as a guiding star and accounted for the wrong setting. The following plates were also examined and no trace of this object found:—

Plate.	Centre.			Exposed.
	°	h	m	
1903	+30	6	36	1902 Mar. 3
2126	,,		,,	1903 Feb. 21
2154	+31	6	40	1903 Feb. 28

Chandler's third catalogue of variable stars was consulted without result, and subsequent lists of new variables as given in the *Astronomical Journal*. The distances between the three images on Plate 2193 were measured and compared with those of stars with which they were found to agree, so that there was evidence against the strange object being a planet. Professor Turner measured its position on Plate 2193 by use of four com-

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parison stars (Leiden 2763, 2803, 2782, 2786) on the afternoon of March 24, and found the following place for 1900·0:

$$\text{R.A.} = 6^{h}\ 37^{m}\ 48^{s}{\cdot}86 \qquad \delta = +30^{\circ}\ 2'\ 39''$$

After sunset the clouds cleared, and on setting carefully for the plate centre $6^{h}\ 36^{m}\ +30^{\circ}$ by means of the adopted guiding star, Cambridge 3447 or B.D. + 30° 1306, he saw the strange object at once. He exposed a plate (No. 2205), and after securing the exposure measured the distance of the object from the guiding star in R.A. by transit in Decl. by the scale for "setting." The differences were found to agree closely with those found by measurement on Plate 2193 during the afternoon.

As it seemed by this time probable that the object was a *Nova*, post-cards were sent off at once to several spectroscopic observers; and early the next morning a telegram despatched to Kiel.

Positions of the Nova and Surrounding Stars.

It was considered advisable to measure the position of the new star, and also as many stars as were visible on the plate within a radius of about three réseau intervals (15′), to assist others in measuring or examining photographs of this region already taken, or for use in visual work with a telescope.

I have accordingly measured all these stars on Plate 2205, only twelve in number, and probably none fainter than about the tenth magnitude; also forty-nine stars, which appear in the Cambridge and Leiden A.G.C.s, used for the determination of the constants for the plate. It is not necessary to give the measures of the latter—I measured them in the direct and reversed positions and took the mean—nor the equations which give for the final constants.

Plate 2205, 1903 March 24, Sid. Time of Exposure $8^{h}\ 41^{m}\ 35^{s}$

a	*b*	*c*	*d*	*e*	*f*
−·00024	+·00567	−·1416	−·00563	−·00051	−·1625

As a check on the work the residuals were formed for each of the forty-nine stars, but these need not be given.

The third exposure, being 4^{m}, was measured, as it showed the most satisfactory images; the night was not fine.

The uncorrected measures of the *Nova* are $\overset{\text{x}}{17{\cdot}6455}$, $\overset{\text{y}}{13{\cdot}2695}$.

The Oxford coordinates, ξ' and η', and the corresponding R.A.s and Decs. for the *Nova*, these twelve stars, and for Camb. 3447, 3455, and 3467 will be found included in Table I. It should be stated here that the position of the *Nova* for epoch 1900·0 derived from this plate (2205) is

R.A.	N. Dec.
$6^{h}\ 37^{m}\ 48^{s}{\cdot}96$	$30^{\circ}\ 2'\ 38''{\cdot}9$

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TABLE I.

Places of Stars near the Nova, as found from Plate 2205; *R.A.* $6^h\ 36^m + 30^\circ$. *Exposed* 1903 *March* 24.

	B.D.	Oxford Magnitude. Measured Diameter.	Equivalent Magnitude.	ξ′. 1900·0.	η′. 1900·0.	Deduced. R.A. 1900·0. h	m	s	N. Dec. 1900·0. °	′	″
1	+30° 1306, 8·6	18·5	8·3	14·3590	13·9982	6	36	31·40	30	4	59·2
2		9·5	10·2	14·7767	17·0656	6	36	41·19	30	20	19·2
3		10·5	10·1	14·8166	13·2831	6	36	41·96	30	1	24·5
4		16·0	9·6	16·1796	13·7041	6	37	13·47	30	3	30·0
5		11·0	10·1	16·6737	13·3785	6	37	24·86	30	1	51·6
6	+29 1324, 9·5	9·0	10·3	16·7068	10·8945	6	37	25·45	29	49	26·6
7		9·0	10·3	16·8126	12·4133	6	37	28·00	29	57	2·2
8		8·5	10·3	17·2151	11·5471	6	37	37·23	29	52	41·9
Nova		30	8·16	17·7160	13·5390	6	37	48·96	30	2	38·9
9		8·5	10·3	17·9231	11·2601	6	37	53·53	29	51	15·3
10		9·5	10·2	19·3946	14·5225	6	38	27·86	30	7	31·6
11		11·5	10·0	19·3956	14·4961	6	38	27·88	30	7	23·4
12		9·5	10·2	19·4201	12·5416	6	38	28·21	29	57	37·3
13		13·0	9·9	19·8411	12·4594	6	38	37·91	29	57	11·9
14	+30 1316, 9·0	18·0	9·4	19·8365	15·3755	6	38	38·18	30	11	46·7
15		16·0	9·6	20·0256	11·2296	6	38	42·00	29	51	2·7

The earlier plate, 2193, would have given nearly twice as many stars within 15′ of the *Nova*, but time has not allowed of its measurement and reduction in the midst of other pressing work.

The Magnitudes from the Measured Diameters.

To determine the magnitudes the formula used was that obtained, provisionally, from a large number of plates by Professor Turner.

$$\text{Diameter} = 13(10{\cdot}8 - \text{magnitude}) + x(12{\cdot}3 - \text{mag.}) \times 0{\cdot}3$$

x being a constant to be determined from each plate and exposure, the magnitudes being those of Argelander. Since $(12{\cdot}3 - \text{mag.}) \times 0{\cdot}3$ is approximately unity for the mean of the stars on the plate, x is found from the mean excess of diameter over the first term.

For Plate 2193 (March 16) x, from forty stars ranging from 6·0 to 9·5, came out to be $-4{\cdot}4$, the resulting magnitude of the *Nova* being

6·93 from the first exposure of 6 minutes.

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x for the second exposure is $-7{\cdot}2$, the resulting magnitude being

6·69 from the second exposure of 4 minutes.

The third exposure is not shown for all stars.

Plate 2205, *exposed March* 24.

Similarly, for this plate x was determined to be $-8{\cdot}0$ for the third exposure; the other two have not yet been measured.

The mean measured diameter of the *Nova* is 30·0 (unit $= 0''{\cdot}3$), and the resulting magnitude obtained is

8·16 from the third exposure of 4 minutes.

In the same way the equivalent magnitudes in Table I. have been obtained.

Saturday, April 4.—From a careful comparison of the *Nova* with +30° 1306, 8·6, I estimated its magnitude to be 0·2 brighter, *i.e.* 8·4; the Moon was near. Two plates were also exposed.

April 23.—In response to applications for positions of fainter stars than the 11th mag. within 15′ of the *Nova*, a plate is being measured which contains stars to the 14th or 15th mag., and the results will probably be communicated to the Society at the May meeting.

University Observatory, Oxford:
1903 *April* 4.

The Place of Nova Geminorum. By Max Wolf, Ph.D.

I send to the Society a direct enlargement of Dugan's plate of February 16 of the region of Nova *Geminorum.* I compared this plate under the stereo-comparator with a plate of Mr. Goetz of April 3. There is nothing exactly at the place of the Nova, but extremely near to it is a starlike object of about the sixteenth magnitude, and this extends over the place of the Nova, so that the Nova may be a part of this chain-like object. The original plate was exposed for three hours with my 6-inch Voigtländer lens. It is enlarged about five times. The exact place on the accompanying photograph (Plate 13) is shown on the key map by the intersection of the two lines near the centre.

Königstuhl: 1903 *April* 6.

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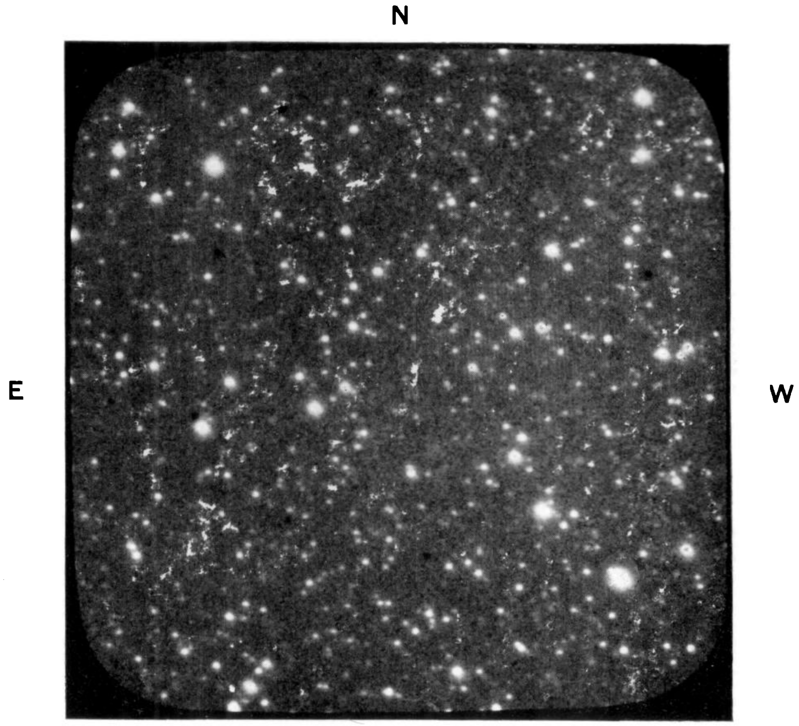
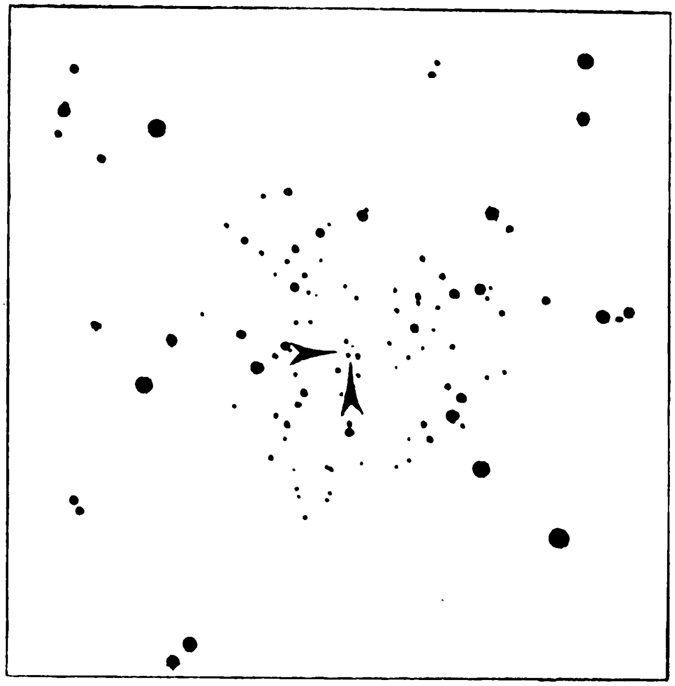


REGION OF NOVA GEMINORUM.—MAX WOLF

1903 Feb. 16^{d} 9^{h} 3^{m}.1 to 12^{h} 11^{m}.1.



KEY MAP.